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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/274,152	03/22/1999	JEFFREY S. MCVEIGH	42390.P7110	8051

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EXAMINER

VO, TUNG T

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/274,152

Applicant(s)

MCVEIGH ET AL.

Examiner

Tung Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/04/2005 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

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international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Igarashi et al. (US 5,539,466).

Re claims 1, 12, 18 and 20, Igarashi discloses an apparatus comprising: a motion estimation circuit (20, 21 and 22 of fig.1) to receive a stream of data comprising at least an anchor frame and a predicted frame, and to utilize even-parity field prediction to unidirectional predict (col. 10, lines 58-67) content of each of a plurality of fields of the predicted frame from corresponding fields of a temporally closest anchor frame in the stream of data, wherein the unidirectional predicted frame composes a fame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data (figs. 7-12, e.g. predicting a frame using unidirectional predict content each of a plurality of fields (odd fields or even fields), wherein the storage medium or computer comprises a plurality instructions to execute the function above.

Re claims 2 and 15, Igarashi further discloses wherein the motion estimation circuit predicts content of a first in the predicted frame from content of a corresponding first field in the anchor frame and a first field motion vector, and predicts content of a second field in the predicted frame from a corresponding second field and a second field motion vector (McoPe, McePo of fig. 10A).

Re claim 3 and 14, Igarashi further discloses wherein the motion estimation circuit measures activity content within each of the plurality of fields of the anchor frame to generate a corresponding plurality of motion vectors (figs. 11, e.g. BMVoBo, MvePo...)

Re claims 4 and 13, Igarashi further discloses wherein the anchor frames used either precede or supersede the predicted frame depending on predicted frame type (figs. 10(A), 10(B), and 11; e.g. MCP, FMVB, MP, BMVB, SMVI, SMVP).

Re claims 5 and 16, Igarashi further discloses wherein the predicted frame and anchor frame are comprised of interlaced video content (figs. 5(A)- 5(C), wherein a first field of each of the predicted frame and the anchor frame contain even-field interlaced video content, while a second field of each of the predicted frame and the anchor frame contain odd-field interlaced video content (fig. 7, ODD FIELD AND EVEN FIELD).

Re claim 6, Igarashi further discloses wherein a first field of the predicted frame and the anchor frame comprises even-field content of the interlaced video content, and a second field of the predicted frame and the anchor frame comprises odd-field content of the interlaced video content (fig. 7)

Re claim 7, Igarashi further discloses wherein a first field of the predicted frame comprises even-field content of the interlaced video content and a first field of the anchor frame comprises odd-field content of the interlaced video content (Ie to Pe of figs. 10(A) and 10(B)).

Re claim 8, Igarashi further discloses wherein a first field of the predicted frame comprises odd-field content of the interlaced video content and a first field of the anchor frame comprises even-field content of the interlaced video content (Io to Pe of figs. 10 (A) and 10(B)).

Re claims 9 and 17, Igarashi further discloses wherein motion estimation circuit generates a motion vector for each of a first and second field of the predicted frame by measuring a sum of absolute activity differences in a corresponding first and second field of the anchor frame (22 and 21 of fig. 1, e.g. a frame motion detection circuit 22 and a field motion detection circuit 21, which serve as motion detection means for detecting, every macro block, motion vectors between frames and a sum of differences of absolute values of respective pixels, and for detecting, every macro block, motion vectors between fields obtained by dividing a frame in dependency upon odd and even scans of pixels and a sum of differences between absolute values of pixels, respectively)

Re claim 10, Igarashi further discloses wherein even-field interlaced video content of the predicted frame is predicted from even-field interlaced video content of the anchor frame, and odd-field interlaced video content of the predicted frame is predicted from odd-field interlaced video content of the anchor frame (figs. 10(A), e.g. MCoPe, MCoPo).

Re claims 11 and 19, Igarashi further discloses wherein the even-field interlaced video content of the predicted frame is predicted from the even-field interlaced video content of the anchor frame and a motion vector (figs. 10(A), 20(B) and 11), wherein the motion vector is determined by measuring a sum of absolute differences within the even-field interlaced video content of the anchor frame (21 and 22 of fig. 1).

Re claims 24-31, see analysis in claims 1-5, and 9-11.

Re claims 21-23 and 32-37, Igarashi further discloses MPEG standard contains I, B, P frames and the anchor frame is one of an I-frame or a P-frame (cols. 17-20).

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4. Claims 1-20, 24-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakajima (US 5,412,425) as shown in figures. 7-16.

Re claims 1-20, 24-31, Nakajima discloses an apparatus comprising: a motion estimation circuit to receive a stream of data comprising at least an anchor frame and a predicted frame, and to utilize even-parity field prediction to unidirectional predict content of each of a plurality of fields of the predicted frame from corresponding fields of a temporally closest anchor frame in the stream of data, wherein the unidirectional predicted frame composes a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data, wherein the storage medium or computer comprises a plurality instructions to execute the functions above (figs. 7-8, 11 and 13), wherein one or more motion estimation vectors are generating for each plurality of fields of the anchor frame by measuring a sum of absolute differences (figs. 8A and 10A).

5. Claims 1-5, 9, 12-15, and 18-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Gonzales (US 5,652,629) as shown in figures 5-8 and 10.

Re claims 1-5, 9, 12-15, and 18-37, Gonzales discloses an apparatus comprising: a motion estimation circuit to receive a stream of data comprising at least an anchor frame and a predicted frame, and to utilize even-parity field prediction to unidirectional predict content of each of a plurality of fields of the predicted frame from corresponding fields of a temporally closest anchor frame in the stream of data, wherein the unidirectional predicted frame composes a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data, wherein the storage medium or computer comprises a plurality instructions to

execute the functions above (figs. 5-8 and 10), wherein one or more motion estimation vectors are generated for each plurality of fields of the anchor frame by measuring a sum of absolute differences and MPEG-1 and MPEG-2 standards, I, B, P.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Krause (US 5,565,922) discloses a motion compensation for interlaced digital video signal.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris. Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tung Vo
Primary Examiner
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